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ABSTRACT

Information about the participation of adults in basic skills education was gathered in the 1995 National Household Education Survey, which investigated participation during the 12 months prior to the telephone interviews. Of the 23,969 adults sampled for the adult education component, 80 percent completed the interview. Key findings included the following: (1) about 1.8 million adults participated in basic skills education; (2) younger adults were more likely to participate and adults over 55 were less likely to participate; (3) about 1.5 million adults received a General Educational Development (GED) certificate or were aged 20 and older and earned a high school diploma; (4) two-thirds of participants in basic skills education attended for 13 weeks or less; (5) 80 percent of participants spent $100 or less for all costs associated with basic skills education; (6) lack of time was the main barrier to participation; (7) adults with higher levels of education were more likely to participate in high school completion programs; and (8) employed or unemployed adults had a higher rate of participation in high school completion programs than did adults who were not in the labor force at all. (20 references) (KC)

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Statistics in Brief

March 1997

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Participation in Basic Skills Education: 1994-95

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One of the National Education Goals states that, "By the year 2000, every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy..." (National Education Goals Panel 1994). One of several important areas related to this goal is basic education for adults who have interrupted their formal schooling or left school before completing a high school diploma. In the 1995 National Household Education Survey (NHES:95), information was collected about the participation of adults in basic skills education, that is, adult education programs designed to help adults improve their basic reading, writing, and math skills or to prepare them to earn a high school diploma or its equivalent (e.g., certificates obtained through General Educational Development testing, or GED.[1]) Information about the participation of adults in English as a Second Language (ESL) programs was collected separately in the NHES:95 survey, and a separate forthcoming report will address issues related to participation in ESL programs.

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Basic skills education, for purposes of this report, includes basic reading, writing, and math programs, GED preparation programs, and other high school completion programs. This report presents rates of participation in basic skills education, examines how these rates are associated with the characteristics of adults, describes selected features of participation, and discusses reported barriers to participation. Three participation rates are examined in this report: (1) the **basic skills education participation rate**, referring to the *combined* educational activities of basic reading, writing, and math programs, GED preparation programs, and other high school completion programs; (2) the **basic reading, writing, and math participation rate**; and (3) the **GED or other high school completion participation rate**. Respondents in the NHES reported their participation based on their understanding of the activities involved, and readers should not assume that the respondents' definitions are the same as those of federal, state, or private programs in basic skills.

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The population of interest for this report includes adults who do not have a high school diploma or equivalent, those who received a high school credential through GED testing in the previous year, and those age 20 and older who received a high school diploma in the previous year. Those without a high school diploma are traditionally recognized as the population of interest for basic skills education. It is for this reason that persons age 16 and older who received a GED in the previous year and persons age 20 and older who received a high school diploma in the previous year are included in the population of interest; that is, they were without a high school diploma or GED for at least part of the previous year. Adults ages 16 to 19 who received a high school diploma in the previous 12 months are not included in the population of interest because they are presumed to have received a "regular" high school diploma.

Information about participation in the previous 12 months was collected in the NHES:95. Key findings concerning participation in basic skills education are as follows:

Basic skills education

- About 1.8 million adults participated in basic skills education during the 12 months prior to the interview. This represents a participation rate of 5.9 percent among the population of interest (described above).
- Younger adults were more likely to participate in basic skills education than older adults, and adults ages 55 and older were less likely to participate than those in any younger age group.
- About 1.5 million adults received a GED or were age 20 and older and earned a high school diploma in the 12 months prior to the interview. Of these adults, 31 percent participated in basic skills education during the 12-month period covered by the survey and the remaining 69 percent did not.
- Two-thirds of participants in basic skills education (66.5 percent) attended for 13 weeks or less in the previous 12 months.
- Some 80.3 percent of the participants reported that they spent $100 or less to pay for basic skills education including tuition, books, transportation, child care, and other expenses over the previous 12 months.
- Lack of time was cited as the main barrier to participation by 42.4 percent of nonparticipants who were interested in basic skills education and aware of available basic skills classes or activities. Another 20.3 percent reported money or cost as a main barrier.

GED or other high school completion programs

- Adults who completed 9th to 12th grade, but had not received a high school diploma or GED, had a higher rate of participation in GED or other high school completion programs (6.7 percent) than adults with fewer years of formal schooling (0.2 percent for those who completed up to 4th grade; 1.6 percent for those who completed 5th to 8th grade).
- Employed or unemployed adults had a higher rate of participation in GED or other high school completion programs (14.8 percent and 8.1 percent, respectively) than adults who were not in the labor force (2.0 percent).[2]

The NHES:95 was a random-digit-dialing telephone survey of the civilian, noninstitutionalized population of the 50 states and the District of Columbia. It was conducted in January through April of 1995. In the Adult Education component of the NHES:95, interviews were conducted with adults age 16 and older who

were not enrolled in elementary or secondary school at the time of the interviews. A description of the study methodology is presented in the Survey Methodology and Data Reliability section of this report.

Population of Interest for Basic Skills Education

An important issue in studying the participation of adults in basic skills education is how to define the population of interest (i.e., adults who could potentially benefit from participation in basic skills education). One approach, the one used in this report, includes adults in the population of interest on the basis of educational attainment. Beder (1991) states that this approach has been found to be pragmatic and precise when estimating participation rates in basic skills education nationally. Moreover, under the Adult Education Act of 1966 (as amended by Public Law 100-297), federal funds for adult education are allocated to each state based on the portion of the adult population that lacks a high school diploma.

Three criteria were used in this report to identify the population of interest who might have benefited from participating in basic skills education during the previous 12 months. Of the 190 million adults age 16 years and older in the total population, an estimated 31 million adults (16.5 percent; table 1) met one of the following criteria:

(1) Had not received a high school diploma or its equivalent;

(2) Received a high school credential through GED testing in the previous 12 months; or

(3) Was age 20 or older and received a high school diploma or its equivalent in the previous 12 months (as noted previously, those age 16 to 19 who received a high school diploma in the previous 12 months are presumed to have a "regular" high school diploma).

Further information on the population of adults without a high school diploma or equivalent is provided in the section on Survey Methodology and Data Reliability.

Participation Rates and Demographic Characteristics

As shown in table 2, about 5.9 percent of the population of interest (1.8 million adults) participated in basic skills education in 1994-95.[3] The rate of participation in GED or other high school completion programs (4.9 percent) was higher than in basic reading, writing, and math programs (2.2 percent). Among the participating adults, about 38 percent took basic reading, writing, and math programs and about 84 percent took GED or other high school completion programs. About 23 percent of the participating adults took part in both basic reading, writing, and math programs and GED or other high school completion programs (not shown in table).[4]

Table 2 presents participation rates in basic skills education by selected demographic characteristics. Three variables (i.e., the adult's age, highest grade completed, and labor force status) are discussed in detail in the following sections because they were found in a multiple regression analysis to have a statistically significant association with participation in basic skills education.[5] Other variables shown in table 2 (i.e., race and ethnicity and number of minors in the household) are not discussed in this report.[6] These data are included in the table as they may be of interest to some readers.[7] More detailed information about the three models tested in the regression analysis and the fit of the three models that were tested can be found in the Survey Methodology and Data Reliability section of this report.

Age. Beder (1990) points out that a large portion of adults age 60 and older are among the population of interest for basic skills education, but these older adults perceive little need to participate in these activities. For this reason, participation rates in basic skills education may be expected to diminish as adults grow older. Adults were grouped into four age categories in order to examine participation rates in basic skills education by age (see table 2). For basic reading, writing, and math programs, the observed participation rate of adults in the youngest age group (6.2 percent of 16- to 24-year- olds) was higher than that of adults in the older age groups (0.2 percent of 55 years and

older). Similarly, the observed participation rate for GED or other high school completion programs was significantly higher for the youngest group than for the oldest group (20.3 percent and 0.2 percent, respectively). Less than 1 percent of the adults in the oldest age group, 55 years and older, participated in any basic skills education. These findings about the association between age and participation are consistent with information from the GED Testing Service, which reports that 802,745 adults took the GED test in 1995, with about 62.3 percent of the GED candidates under the age of 25 and the average age being 25.2 years (GED Testing Service 1996). While test taking is not the same as educational program taking, these related phenomena both show more activity among younger adults. Also shown in table 2, adults age 39 and younger were more likely to participate in GED or other high school completion programs than to participate in basic reading, writing, and math programs.

Highest grade completed. Adults who have completed most of their elementary and secondary education are closer to completing a high school education, and therefore would need to invest less time and money to obtain their high school credentials than those who have completed fewer years of schooling. Hence, one might hypothesize that participation rates may be higher for those who have completed a higher grade in school than those with less schooling. On the other hand, it may be hypothesized that those who have completed less schooling may be lacking in basic skills to a greater degree, and therefore may be considered to be more "in need" of additional education. The findings from the NHES:95 are consistent with the first of these hypotheses.

The rate of participation in GED or other high school completion programs was higher among adults who completed 9th to 12th grade (6.7 percent) than among those who completed 8th grade or less (0.2 percent for no formal schooling to 4th grade; 1.6 percent for 5th to 8th grade; table 2). Adults who completed 9th to 12th grade, but did not have a high school diploma or GED, were more likely to participate in GED or other high school completion programs (6.7 percent) than in basic reading, writing, and math programs (2.3 percent). About one-third of adults who received a high school diploma or GED in the previous 12 months reported participating in basic skills education.

Labor force status. Adults who were in the labor force, whether employed or unemployed, were more likely to participate in basic skills education than adults who were not in the labor force (9.6 percent for employed; 15.5 percent for unemployed; 2.6 percent for those not in the labor force). This pattern holds true for participants in basic reading, writing, and math programs and GED or other high school completion programs. One of several possible interpretations of these findings is that those who are not in the labor force do not see the advantage of participating in these programs to the same extent as those in the labor force. For example, those who are not in the labor force may not realize the return on investment (e.g., wage or salary increase) as much as those in the labor force. As seen in table 2, employed or unemployed adults participated at a higher rate in GED or other high school completion programs than adults who were not in the labor force; this may be because they perceived a GED or high school completion as an advantage in obtaining a job.

Distributions of the characteristics of participating adults in basic skills education (including basic reading, writing, and math programs and GED or other high school completion programs) are shown in table 7.

Features of Participation

Two aspects of participation in basic skills education are included in this report: the number of weeks and hours per week of instruction and personal expenses for participating in basic skills education. These two areas are also related to the selected barriers to participation discussed in the following section: time and money or cost.

Weeks of participation. Two-thirds of basic skills education participants (66.5 percent) reported that they participated for 13 weeks or less in the previous 12 months (table 3). About 18.7 percent of the participants took basic skills education from 14 to 26 weeks in the previous year, and the

remainder of the participants (14.8 percent) attended basic skills education for 27 weeks or longer. There was considerable variation in the number of weeks for which adults participated in basic skills education in the previous year -- a range from 1 to 52 weeks, with an average of 10 weeks (not shown in tables). This is the same as the median of 10 weeks reported in a national evaluation study of federally funded adult basic education (ABE) programs (Development Associates, Inc. 1994). Some of these adults may have begun their participation prior to the start of the 12-month reference period for this study or may have continued after the time of the NHES:95 interview. As a result, the measure of participation during the previous 12 months does not necessarily reflect the entirety of adults' periods of participation.

Hours per week of participation. Two-thirds of the participants (64.1 percent) reported that they took part in basic skills education for 10 hours or less per week in the past 12 months (table 3). About 27.1 percent of the participants took basic skills education from 11 to 20 hours per week, and the remainder of the participants (8.9 percent) attended basic skills education for more than 21 hours per week. On average, the participants spent 15 hours per week in basic skills education (not shown in tables). In an evaluation of ABE programs, Development Associates, Inc. (1994) reported that ABE students receive a median 31 hours of instruction within 12 months of their enrollment. Participants in the NHES, which include those in basic reading, writing, and math programs, those in GED preparation, and those in high school completion programs, report considerably more hours of instruction (a median of 10 weeks and a median of 11 hours per week).

Personal expenses. Federal, state, and local governments, as well as private organizations, have played an important role in funding basic skills education programs. As shown in table 3, about 80.3 percent of the participants in basic skills education reported that they spent $100 or less of their personal resources in order to participate in programs, including paying for tuition, books, transportation, child care, and other expenses over the previous 12 months. About 19.7 percent paid more than $100. The average amount of personal expenses was $289 for participants in basic reading, writing, and math programs only and $171 for participants in GED or other high school completion programs only (not shown in tables). Federal ABE programs are prohibited from charging participants for classes; however, some participants in such programs may have reported personal expenses (e.g., transportation or child care) in the NHES.

Aspects of Nonparticipation

Interest and knowledge of basic skills education. The vast majority of the population of interest (94.1 percent, or 29 million adults) did not take part in any basic skills education in the 12 months prior to the interview. Nonparticipants in basic skills education (except adults who received a high school diploma from foreign countries within the previous year) were asked about whether they had an interest in taking any programs and, if so, whether they knew of any programs they could have taken. As shown in table 4, about 4.6 million adults (15.9 percent of the 29 million nonparticipating adults) reported that they were interested in participating in basic skills education and about 1.6 million adults (34.6 percent of the 4.6 million interested nonparticipants) knew of classes or programs they could take to improve their basic skills. These findings are congruent with the literature stating that nonparticipants are often not interested in taking any programs or that they are unaware of any programs they could take (Cross 1981; Darkenwald and Merriam 1982).

Main barriers to participation. Those nonparticipating adults who stated that they had an interest and knew of programs or classes they could have taken were asked about barriers to participation.[8] As shown in table 5, time was reported as the main barrier by 42.4 percent of this subset of the nonparticipating adults, a higher percentage than for money or cost. Money or cost was identified as the main barrier by one-fifth of the nonparticipants.

Because the standard errors associated with these estimates are large (due to the small sample sizes), only fairly large differences are statistically significant. For example, no significant differences

were observed between adults in different age groups with regard to the reported main barrier to participation. Labor force status, however, was associated with the main barrier to participation. Employed adults were more likely to report time as the main barrier to participation than adults who were not in the labor force. On the other hand, adults who were not in the labor force cited other barriers (including child care and transportation) more often than adults who were employed.

Summary

About 1.8 million adults (5.9 percent of the population of interest) were engaged in basic skills education in the 12-month period prior to the NHES:95 interview. The population of interest includes adults age 16 and older and not enrolled in elementary or secondary school who (1) did not have high school diploma or its equivalent; (2) received a high school equivalency certificate in the previous year through GED testing in the 12 months prior to the interview; or (3) were age 20 or older and received a high school diploma or its equivalent in the 12-month period prior to the interviews.

Participation in basic skills education was more common among younger than older adults and those who obtained a high school completion credential in the previous 12 months than those who did not. Adults who completed 9th to 12th grade (but did not have a high school diploma or GED) were more likely to have participated in GED or other high school completion programs than adults with fewer years of formal schooling. Similarly, adults in the labor force participated in GED or other high school completion programs more than adults who were not in the labor force.

About two-thirds of the participants took part in basic skills education for 3 months or less in the previous 12 months. About four-fifths of the participants reported that they used $100 or less of their personal resources to participate in basic skills education.

The vast majority of nonparticipating adults in the population of interest reported that they were not interested in taking basic skills education. About one-third of those who had an interest reported they knew of programs or classes they could have taken. Nonparticipating adults who had an interest in participating and knew of classes to take were asked about barriers to participation; they were more likely to report time as their main barrier to participation than money or cost.

Survey Methodology and Data Reliability

The 1995 National Household Education Survey is a telephone survey conducted by the U.S. Department of Education's National Center for Education Statistics (NCES). Data collection took place from January through April of 1995. The sample is nationally representative of all civilian, noninstitutionalized persons in the 50 states and the District of Columbia. The sample was selected using random-digit-dialing methods and included persons living in households with telephones. The data were collected using computer-assisted telephone interviewing technology. This section provides a brief description of the study methodology; further details appear in the *National Household Education Survey of 1995: Adult Education Data File User's Manual* (Collins et al. 1996).

The Adult Education component of the NHES:95, which is the basis of this report, sampled civilian adults who were age 16 and older and not enrolled in elementary or secondary school at the time of the interview. A set of screening questions was administered to an adult member of the household to collect the information required for sampling household members for interviews. Adults who did not receive a high school diploma or its equivalent and who had participated in an educational activity in the previous 12 months were sampled at higher rates than other adults. In general, one adult was selected per household. However, up to two adults were eligible to be sampled in households in which any adult was classified as an adult education participant without a high school diploma or its equivalent. Weighting procedures were used to adjust for differences in probabilities of selection.

In the adult education interview, information was collected about educational attainment,

participation in a wide range of education activities in the previous 12 months, and labor force participation. The only person who could respond to the adult education interview was the sampled adult him/herself; multiple attempts were made to complete interviews with persons not available at the time of selection. Interviews were conducted in both English and Spanish. A total of 19,722 adult education interviews were completed in the NHES:95.

While this report focuses on the participation of adults in basic skills education and barriers to participation, other uses of the NHES:95 data include specifics of participation in five additional types of adult education activities -- English as a Second Language, credential programs, apprenticeship, work-related courses, and personal development courses -- including the role of employers as providers and sponsors of educational activities and the reasons adults participate.

Logistic regression analysis. The adult characteristics presented in tables 2 and 7 were subjected to a logistic regression analysis in order to identify whether the adult characteristics were each significantly related to participation in basic skills education when other variables of interest were included in the regression model (table 6). The item asking whether a high school credential received in the previous year was acquired through GED testing was omitted from the regression model, since this variable is a correlate of participation and a potential outcome measure and not an adult characteristic. The procedure used for this analysis was WESLOG, a software program using a replication method to take into account the complex sample design. A main effects model was used for this procedure, because the intent was to identify variables significantly associated with participation.

The results of the regression analysis indicate that four variables were significantly associated with participation in basic skills education at the 95 percent confidence level. These variables include age, highest grade completed, labor force status, and black race. The other variables included in the models (i.e., Hispanic origin and whether or not there were minor children in the household) were not found to be significantly related to participation in basic skills education. The parameter estimates and *t* value for the adult characteristics are shown in table 6.

In logistic regression models, some researchers evaluate the fit of the model by using a statistic that indicates how much the set of predictor variables influences the goodness of fit Chi-square statistic. One such measure is R^2_{LA} which is almost equal to the proportional reduction in the Chi-square statistic or the log-likelihood due to the inclusion of the predictor variables. It would be exactly equal to this reduction except for some adjustments for the number of predictor variables in the model. Thus, a value near 0 indicates the predictors have little impact on the value of the log-likelihood but a value near 1 suggests the predictors have a large impact.

This statistic is somewhat analogous to the ordinary R^2 for linear regression models; however, in linear models the R^2 measures the exact reduction in variation due to the predictor variables. In fact, R^2 is defined exactly as a ratio of variances. No such measure exists for logistic models. More information on the interpretation of the R^2_{LA} statistic is given by Menard (1995).

Three main-effects logistic regression models were examined to help guide this analysis: one for predicting the probability of being a participant in basic skills education, another for being a participant in basic reading, writing, and math programs, and the third for being a participant in GED or other high school completion programs. Each model included the following predictor variables: labor force status, age, indicator variable for being black, an indicator variable for being Hispanic, whether minor children were in the household, and highest grade completed. For the three models, the R^2_{LA} statistics were 0.215, 0.117, and 0.239, respectively. The four predictor variables found to be statistically significant in any of three logistic models were age, labor force status, highest grade completed, and black race. In this report, however, the discussion in the text focuses on the three predictor variables, including age, labor force status, and highest grade completed.

Population of adults without a high school diploma. The NHES estimate of the number of adults in the United States who do not have a high school diploma is considerably lower than the estimate from the 1990 decennial census. Similarly, the estimate from the Current Population Survey (CPS) of 1994 (the population totals used in weighting the NHES) is also lower than the estimate from the decennial census. While factors such as the passage of time and mortality may have some impact on these estimates, the more important differences have to do with population coverage and the specific questions used to identify the population of interest for basic skills.

The decennial census represents the entire population of the United States, whereas the NHES and the CPS are household-based surveys. Therefore, the census estimates include many persons, such as those who are in prisons or other institutions, in addition to persons in households. The census estimate of the total number of persons 16 and older in the U.S. population who are not enrolled in school and do not have a high school diploma is 42.7 million. Using the NHES and CPS questions on highest grade or year of school completed, the estimated numbers of persons age 16 and older and not in elementary or secondary school who do not have a diploma are 36.4 million (NHES:95) and 35.8 million (1994 CPS).

For purposes of identifying the population of interest for this report, additional questions from the NHES:95 were used. A followup question to the item on highest grade or year of school completed asked specifically if the person had a high school diploma or equivalent, another question asked whether the diploma or equivalent had been received in the previous 12 months, and a third question asked whether the credential had been obtained through GED testing. These items were used to arrive at the final population of interest for this report, an estimated 31 million adults.

Data reliability. Estimates produced using data from the NHES:95 are subject to two types of error, sampling errors and nonsampling errors. Nonsampling errors are errors made in the collection and processing of data. Sampling errors occur because the data are collected from a sample rather than a census of the population.

Nonsampling errors. Nonsampling error is the term used to describe variations in the estimates that may be caused by population coverage limitations and data collection, processing, and reporting procedures. The sources of nonsampling errors are typically problems like unit and item nonresponse, the differences in respondents' interpretations of the meaning of the questions, response differences related to the particular time the survey was conducted, and mistakes in data preparation.

In general, it is difficult to identify and estimate either the amount of nonsampling error or the bias caused by this error. This is particularly problematic in random-digit-dialing surveys because so little is known about the sampled telephone numbers and households (Groves et al. 1988). Since nonresponse is an important source of nonsampling error in the NHES:95, an NCES Working Paper (Brick and Broene forthcoming) was prepared to address this issue. The results of this research uncovered no large response biases, however, as noted, the analysis is limited because so little is known about nonresponding households.

In the NHES:95, efforts were made to prevent nonsampling errors from occurring and to compensate for them where possible. For instance, during the survey design phase, focus groups and cognitive laboratory interviews were conducted for the purpose of assessing respondent knowledge of the topics, comprehension of questions and terms, and the sensitivity of items. For a discussion of the use of cognitive laboratory research in the NHES in general, see Nolin and Chandler (1996). The design phase also included a multiphase field test in which about 550 adult education interviews were conducted. A special effort was made to include adults with relatively low educational attainment (in a "seeded" field test sample) in order to test questions pertaining to basic skills education.

An important source of nonsampling error for a telephone survey is the failure to include persons who do not live in households with telephones. About 95 percent of all adults age 16 and older live

in households with telephones. Noncoverage is associated with socioeconomic status, such that persons with lower education and/or lower income levels are more likely to live in nontelephone households. Estimation procedures were used to help reduce the bias in the estimates associated with excluding the 5 percent of adults who do not live in telephone households. See Brick (1996) for additional information on population coverage and adjustment procedures.

Response rates. In the NHES:95, a set of screening questions (Screeners) were completed with 45,465 households, with a response rate of 73.3 percent. Of the 23,969 adults sampled for the Adult Education component, 80 percent (19,722) completed the interview. Thus, the overall response rate for the adult education interview is 58.6 percent (the product of the Screener response rate and the adult education interview completion rate). As noted above, nonresponse analysis conducted for the NHES:95 uncovered no large biases, but this analysis is limited by the fact that little is known about nonresponding households in RDD surveys.

For the adult education interview, item nonresponse (the failure to complete some items in an otherwise completed interview) was very low for most items. The item response rates for all variables in this report are higher than 92 percent; most are over 95 percent.

Sampling errors. The sample of telephone households selected for the NHES:95 is just one of many possible samples that could have been selected. Therefore, estimates produced from the NHES:95 sample may differ from estimates that would have been produced from other samples. This type of variability is called sampling error because it arises from using a sample of households with telephones, rather than all households with telephones.

The standard error is a measure of the variability due to sampling when estimating a statistic; standard errors for estimates presented in this report were computed using a jackknife replication method. Standard errors can be used as a measure of the precision expected from a particular sample. The probability that a population parameter obtained from a complete census count would differ from the sample estimate by less than 1 standard error is about 68 percent. The chance that the difference would be less than 1.65 standard errors is about 90 percent, and that the difference would be less than 1.96 standard errors is about 95 percent.

Standard errors for the estimates are presented in the tables. These standard errors can be used to produce confidence intervals. For example, an estimated 5.9 percent of adults participated in basic skills education in the previous 12 months, and this figure has an estimated standard error of 0.49. Therefore, the estimated 95 percent confidence interval for this statistic is approximately 4.9 to 6.9 percent (5.9 ± 1.96 (.49)). That is, in 95 out of 100 samples from the same population, the population parameter should fall within the confidence intervals so constructed.

The tests of significance used in this analysis are based on Chi-squared tests for bivariate relationships and Student's *t* statistics for the comparison of individual estimates. The Rao-Scott Chi-squared test was used to take into account the complex sample design. As the number of comparisons at the same significance level increases, it becomes more likely that at least one of the estimated differences will be significant merely by chance, that is, it will be erroneously identified as different from zero. Even when there is no statistical difference between the means or percentages being compared, there is a 5 percent chance of getting a significant *t* value from sampling error alone. As the number of comparisons increases, the chance of making this type of error also increases. A Bonferroni adjustment was used to correct Student's *t* tests for multiple comparisons. This method adjusts the significance level for the total number of comparisons made with a particular classification variable. All the differences cited in this report are significant at the 0.05 level of significance after a Bonferroni adjustment.

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Endnotes

[1]General Educational Development, or GED, actually refers to a test through which adults may obtain a high school equivalency certificate. In common use, however, this equivalency certificate itself is often referred to as a "GED," and programs offered to those preparing to take the test are often called "GED preparation programs."

[2]Includes adults who are neither working nor actively looking for work (e.g., retirees, homemakers, students, the ill, and disabled adults) (Cohany, Polivka, and Rothgeb 1994).

[3]In the field test of the NHES:95 Adult Education component, a small number of adults who had obtained high school diplomas in foreign countries reported that they had taken basic skills or GED preparation programs in the United States. This is not an indication that all persons with foreign high school diplomas could substantially benefit from basic skills education. Rather, anecdotal information from respondents indicates that some employers or educational institutions may require an academic credential received in this country. Of the 197,400 (standard error = 50,982) adults who received high school diplomas from a foreign country but did not have college or university degrees, an estimated 46,374 (standard error = 21,855) adults reported that they participated in basic skills education in the 12 months prior to the interview. The criteria for inclusion in the population of interest for this report were applied without regard to the country in which the respondent's education took place. Therefore, if the respondent received a high school diploma or high school equivalency in another country in the 12 months prior to the interview, and met other criteria (i.e., age) for the population of interest, they are included in this report.

[4]Standard errors for the estimates not appearing in tables are 38 percent, s.e. = 3.74; 84 percent, s.e. = 2.75; 23 percent, s.e. = 3.39.

[5]The regression analysis used a subsample of 2,526 cases (93.5 percent of the total sample of the population of interest) for whom the highest actual grade completed was reported in the interview.

[6]The variable for black race was significantly associated with participation in GED or other high school completion programs, but the bivariate relationship of race and participation in basic skills education is not discussed in this report.

[7]These variables have been widely used in studies focusing on basic skills education to present the profiles of the population of interest. Examples of the studies include American Council on Education and Educational Testing Service (1995); Anderson and Darkenwald (1979); Kirsch et al. (1993); and Development Associates, Inc. (1993).

[8]Two studies, a reinterview study and a response bias study, were undertaken as part of a set of activities to assess data quality in the NHES:95. The analyses of these studies identified some of the barriers items as having relatively high response variability and response bias. While the sample sizes for these data quality studies were small, the findings suggest that the responses to the barriers items may not be very reliable. Readers who are interested in additional information on the reinterview study and the bias study may wish to review two NCES Working Papers: *The 1995 National Household Education Survey: Reinterview Results for the Adult Education Component* (Working Paper 96-14); and *Estimation of Response Bias in the NHES:95 Adult Education Survey* (Working Paper 96-13).

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Table 1.—Number and percent of adults,[1] by criteria for inclusion in the population of interest for basic skills education[2]: 1994-95

Criteria	Number (in thousands)	s.e. (in thousands)	Percent	s.e.
Total adults	189,576	153	100.0	0.00
Adults who did not receive a high school diploma or its equivalent	29,727	643	15.7	.34
Adults who were 16 to 19 years old and received a high school credential through GED in the past 12 months	213	43	.1	.02
Adults who were 20 years or older and received a high school diploma or its equivalent in the past 12 months	1,288	129	.7	.07
Adults who are not included in the population of interest	158,347	666	83.5	.33

[1]Includes civilian, noninstitutionalized adults, age 16 or older, who were not enrolled in elementary or secondary school at the time of the interview.

[2]Three criteria were used: (1) did not have a high school diploma or its equivalent; (2) received a high school credential through GED testing in the last 12 months; or (3) was age 20 or older and received a high school diploma or its equivalent in the last 12 months.

NOTE: s.e. is standard error. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1995.

Table 2.—Percent of adults[1] who participated in basic skills education, by adults' characteristics: 1994-95

Adult characteristic	Estimated population of interest (in thousands)		Basic skills education		Type of basic skills education participation[2]			
					Basic reading, writing, and math programs		GED or other high school completion programs	
	Number	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Total	31,229	617	5.9	.49	2.2	.25	4.9	.43
Age								
16 to 24 years	3,573	224	23.1	2.55	6.2	1.20	20.3	2.41
25 to 39 years	6,878	381	9.1	1.18	3.6	.67	8.1	1.13
40 to 54 years	6,019	298	5.4	.93	3.2	.80	3.9	.73
55 years and older	14,758	514	.4	.16	.2	.14	.2	.08
Race and ethnicity								
White, non-Hispanic	18,227	545	4.6	.56	1.5	.29	3.9	.49
Black, non-Hispanic	5,305	228	7.9	1.39	3.0	.64	7.2	1.33
Hispanic	6,127	189	7.5	1.20	3.2	.81	5.9	1.08
Other races, non-Hispanic	1,570	153	7.6	2.49	3.5	1.22	6.2	2.32
Highest grade level[3]								
No formal schooling to 4th grade	2,528	209	1.7	1.23	1.6	1.23	.2	.10
5th to 8th grade	10,396	424	2.3	.47	1.2	.40	1.6	.40
9th to 12th grade, but no high school diploma or GED	16,872	468	7.5	.64	2.3	.29	6.7	.63
Received a high school diploma or GED in the past year								
Yes	1,501	129	31.0	4.49	11.9	2.80	26.7	4.22
No	29,727	643	4.6	.40	1.7	.22	3.8	.37
Labor force status								
Employed, in labor force	10,643	443	9.6	.95	3.7	.50	8.1	.80
Unemployed, in labor force	2,177	207	15.5	2.93	5.2	1.07	14.8	2.91
Not in labor force	18,409	560	2.6	.44	1.0	.33	2.0	.33
Minor children in household								
None	19,141	583	3.0	.35	1.1	.19	2.4	.34
One child	4,907	323	9.9	1.41	3.9	.71	8.6	1.17
Two or more children	7,181	481	10.7	1.28	4.0	.87	9.2	1.23

[1]Includes civilian, noninstitutionalized adults, age 16 or older, who were not enrolled in elementary or secondary school at the time of the interview and who met one of the following criteria: (1) did not have a high school diploma or its equivalent, (2) received a high school credential through GED testing in the last 12 months, or (3) was age 20 or older and received a high school diploma or its equivalent in the last 12 months.

[2]About 23 percent of the participating adults took part in both basic reading, writing, and math programs and GED or other high school completion programs.

[3]Excluded from the "highest grade level" are those who reported that they obtained a high school diploma or GED in the last 12 months, but did not report their highest grade level prior to receiving their high school diploma or GED, or those who reported that they had a vocational diploma, an associate's degree, or some college, but did not receive a high school diploma or GED. Among the population of interest for this report, there are about 1,432,162 adults (5 percent of the population of interest) who did not report their highest grade level; about 10 percent of them (148,199 adults) are 16 to 19 years old and 90 percent of them (1,283,963 adults) are age 20 and older.

NOTE: s.e. is standard error. Because of rounding, details may not add to totals. This table contains row percentages of participation rates in basic skills education. For example, 5.9 percent of 31,229,000 adults reported that they have participated in basic skills education in the 12 months prior to the interview.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1995.

Table 3.—Number and percent of adults* who participated in basic skills education, by length and cost of participation: 1994-95

ength and cost of participation	Adults who participated in basic skills education			
	Number (in thousands)	s.e. (in thousands)	Percent	s.e.
Total	1,827	147	100.0	--
Number of weeks of participation				
1 to 13 weeks	1,215	123	66.5	3.26
14 to 26 weeks	342	55	18.7	3.01
27 to 52 weeks	270	52	14.8	2.55
Number of hours per week of participation				
1 to 10 hours	1,170	110	64.1	3.21
11 to 20 hours	495	78	27.1	3.33
21 hours or more	162	32	8.9	1.81
Personal expenses				
$100 or less	1,467	139	80.3	2.70
More than $100	360	50	19.7	2.70

*Includes civilian, noninstitutionalized adults, age 16 or older, who were not enrolled in elementary or secondary school at the time of the interview and who met one of the following criteria: (1) did not have a high school diploma or its equivalent, (2) received a high school credential through GED testing in the last 12 months, or (3) was age 20 or older and received a high school diploma or its equivalent in the last 12 months.

NOTE: s.e. is standard error. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1995.

Table 4.—Number and percent of nonparticipating adults[1] who were interested in and knew of basic skills education: 1994-95

Interest and knowledge	Adults who did not participate in basic skills education[2]			
	Number (in thousands)	s.e. (in thousands)	Percent	s.e.
Total	29,250	651	100.0	--
Interested in taking basic skills education				
Yes	4,637	309	15.9	1.04
No	24,614	658	84.1	1.04
Knew of classes they could have taken[3]				
Yes	1,603	156	34.6	2.85
No	3,034	258	65.4	2.85

[1]Includes civilian, noninstitutionalized adults, age 16 or older, who were not enrolled in elementary or secondary school at the time of the interview and who met one of the following criteria: (1) did not have a high school diploma or its equivalent, (2) received a high school credential through GED testing in the last 12 months, or (3) was age 20 or older and received a high school diploma or its equivalent in the last 12 months.

[2]Excludes adults who did not participate in basic skills education and received a high school diploma from foreign countries in the past 12 months (about 151,000 adults).

[3]This question was asked of only nonparticipating adults who were interested in participating in basic skills education.

NOTE: s.e. is standard error. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1995.

Table 5.—Number and percent of nonparticipating adults[1] who reported main barriers to participation in basic skills education, by adults' characteristics: 1994-95

Adult characteristic	Number of adults[2] who were asked about main barriers to participation (in thousands)		Main barriers to participation in basic skills education					
			Time		Money or cost		Other barriers[3]	
	Number	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Total	1,559	154	42.4	4.79	20.3	4.27	37.2	6.25
Age								
16 to 24 years	416	83	39.7	10.42	20.1	5.75	40.2	10.68
25 to 39 years	704	106	37.1	6.48	24.6	7.16	38.3	8.94
40 to 54 years	314	84	54.3	10.99	16.3	7.13	29.4	11.55
55 years and older	--	--	--	--	--	--	--	--
Labor force status								
Employed, in labor force	900	131	64.8	4.73	16.4	4.12	18.8	5.06
Unemployed, in labor force	--	--	--	--	--	--	--	--
Not in labor force	434	87	8.0	4.09	21.8	10.57	70.1	10.95

[1]Includes civilian, noninstitutionalized adults, age 16 or older, who were not enrolled in elementary or secondary school at the time of the interview, who did not participate in basic skills education, and who met one of the following criteria: (1) did not have a high school diploma or its equivalent, (2) received a high school credential through GED testing in the last 12 months, or (3) was age 20 or older and received a high school diploma or its equivalent in the last 12 months.

[2]Questions about main barriers to participation in basic skills education were asked only of nonparticipating adults who were interested in, knew of any basic skills education they could have taken, and reported that at least one of the primary barriers (i.e., time, money or cost, child care, transportation, or other barrier) was a major or minor obstacle. Among nonparticipating adults, about 44,000 adults who reported that time, money or cost, child care, transportation, or other barriers were not an obstacle were excluded.

[3]Includes child care (16 percent) and transportation (10 percent), as well as "other" barriers volunteered by respondents (12 percent). Some of these other barriers include family obligations, caring for sick or elderly family members, being elderly, work responsibilities, and health-related reasons. Adults who were not in the labor force more often reported other barriers as their main barrier when compared to those who were employed. This may reflect that those not in the labor force may be older, on average, or may bear significant family responsibilities.

--Unweighted number of cases is less than 30.

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1995.

Table 6.—Logistic regression analyses* of adult characteristics and participation in basic skills education, basic reading, writing, and math programs, and GED or other high school completion programs: 1994-95

Parameter	Participation in basic skills education		Participation in basic reading, writing, and math programs		Participation in GED or high school completion programs	
	Parameter estimate	*t*	Parameter estimate	*t*	Parameter estimate	*t*
Age	-.08	-11.10	-.05	-5.55	-.09	-10.48
Highest grade completed	.06	1.01	.01	.05	.13	2.90
Employment status (employed vs. not employed)	-.28	-2.31	-.27	-1.35	-.32	-2.72
Black	.49	2.03	.60	1.71	.57	2.12
Minor children in household	.23	1.03	.51	1.54	.29	1.36
Hispanic origin	-.16	-.64	-.05	-.14	-.10	-.36

*The regression analysis used in the highest grade completed as reported by the respondents. That is, respondents who reported actual highest grade regardless of whether they had already received a high school diploma or GED were included in the regression analysis. Some respondents, when asked their highest grade, reported the highest "regular" school grade they completed and then reported in the next item that they had a diploma or equivalent. Some adults in the population of interest reported at the "highest grade" question that they had a high school diploma or equivalent and therefore were not asked to report the highest grade completed. These adults were excluded from the regression analysis.

NOTE: The critical *t* value at the 95 percent confidence level is 1.96.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1995.

Table 7.—Percent of adults[1] participating in basic skills education, by adults' characteristics: 1994-95

Adult characteristic	Estimated population of interest (in thousands)		Basic skills education		Type of basic skills education participation[2]			
					Basic reading, writing, and math programs		GED or other high school completion programs	
	Number	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Total	31,229	617	100.0	0.0	100.0	0.0	100.0	0.0
Age								
16 to 24 years	3,573	224	45.1	3.58	31.9	5.55	46.9	4.21
25 to 39 years	6,878	381	34.4	3.43	35.5	5.48	36.1	3.79
40 to 54 years	6,019	298	17.7	2.68	28.0	5.79	15.2	2.80
55 years and older	14,758	514	2.8	1.25	4.6	2.98	1.8	.75
Race and ethnicity								
White, non-Hispanic	18,227	545	45.5	3.67	40.5	5.88	45.6	4.27
Black, non-Hispanic	5,305	228	23.0	3.20	23.0	4.70	24.9	3.50
Hispanic	6,127	189	25.0	3.69	28.6	5.73	23.3	4.07
Other races, non-Hispanic	1,570	153	6.6	2.10	7.9	2.74	6.3	2.30
Highest grade level[3]								
No formal schooling to 4th grade	2,528	209	2.8	2.02	7.4	5.46	.3	.20
5th to 8th grade	10,396	424	15.3	2.66	23.0	6.15	13.0	2.89
9th to 12th grade, but no high school diploma or GED	16,872	468	81.9	3.15	69.6	7.66	86.7	2.90
Received a high school diploma or GED in the past year								
Yes	1,501	129	74.5	2.91	74.4	5.03	74.0	3.63
No	29,727	643	25.5	2.91	25.6	5.03	26.0	3.63
Labor force status								
Employed, in labor force	10,643	443	55.7	3.56	56.4	6.30	55.8	3.76
Unemployed, in labor force	2,177	207	18.5	3.00	16.2	3.10	20.9	3.37
Not in labor force	18,409	560	25.8	3.42	27.4	6.71	23.4	3.25
Minor children in household								
None	19,141	583	31.6	3.39	30.8	5.67	29.7	3.56
One child	4,907	323	26.6	3.00	27.5	4.40	27.3	3.51
Two or more children	7,181	481	41.9	3.75	41.7	6.63	43.0	4.66

[1]Includes civilian, noninstitutionalized adults, age 16 or older, who were not enrolled in elementary or secondary school at the time of the interview and who met one of the following criteria: (1) did not have a high school diploma or its equivalent, (2) received a high school credential through GED testing in the last 12 months, or (3) was age 20 or older and received a high school diploma or its equivalent in the last 12 months.

[2]About 23 percent of the participating adults took part in both basic reading, writing, and math programs and GED or other high school completion programs.

[3]Excluded from the "highest grade level" are those who reported that they obtained a high school diploma or GED in the last 12 months, but did not report their highest grade level prior to receiving their high school diploma or GED, or those who reported that they had a vocational diploma, an associate's degree, or some college, but did not receive a high school diploma or GED. Among the population of interest for this report, there are about 1,432,162 adults (5 percent of the population of interest) who did not report their highest grade level: about 10 percent of them (148,199 adults) are 16 to 19 years old and 90 percent of them (1,283,963 adults) are age 20 and older.

NOTE: s.e. is standard error. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1995.